

FINAL TRIP REPORT

MILLER CHEMICAL HOMEWELL SAMPLING HANOVER, ADAMS COUNTY, PENNSYLVANIA

**EPA CONTRACT NOS.: EP-S3-10-05 and EP-S3-15-02
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LIST OF ACRONYMS AND ABBREVIATIONS

µg/L	micrograms per liter
DO	dissolved oxygen
EPA	United States Environmental Protection Agency
mg/L	milligrams per liter
MCL	Maximum Contaminant Level
ORP	Oxidation Reduction Potential
OSC	On-Scene Coordinator
QAPP	Quality Assurance Project Plan
SOP	Standard Operating Procedure
START	Superfund Technical Assessment and Response Team
TAL	Target Analyte List
TDD	Technical Direction Document
TOC	total organic carbon
UFP	Uniform Federal Policy
VOC	volatile organic compound
WESTON®	Weston Solutions, Inc.

1.0 INTRODUCTION

Under the Eastern Area Superfund Technical Assessment and Response Team (START) Contract Nos. EP-S3-10-05 and EP-S3-15-02, Technical Direction Document (TDD) Nos. WS01-15-06-001 and W501-15-07-026, the U.S. Environmental Protection Agency (EPA) Region III tasked Weston Solutions, Inc. (WESTON[®]) to collect residential drinking water samples from residences located along the Conewago Creek downstream from the Miller Chemical Homewell Sampling Site (the Site) located in Hanover, Adams County, Pennsylvania. Sampling activities were conducted under TDD No. WS01-15-06-001. This report was prepared under TDD No. W501-15-07-026.

The objective of this sampling event was to determine if contaminants associated with the Site and associated fire suppression runoff may have impacted residential drinking water wells. WESTON collected residential well water samples at four residential properties located downstream of the Site along, or adjacent to, Conewago Creek. At one of the residences, a groundwater sample from a natural spring was also collected. At each sampling location, water quality measurements were collected. All sampling locations were identified and selected by the EPA On-Scene Coordinator (OSC).

2.0 BACKGROUND

This section describes the site location, presents a description of the Site, and discusses the site history.

2.1 SITE LOCATION

The Site is located at 120 Radio Road, Hanover, Adams County, Pennsylvania, as depicted on Figure 1, Site Location Map. The residential locations where samples were collected are located in Adams County, as depicted in Figure 2, Residential Sampling Locations. The coordinates of the approximate center of the Site are Latitude 39.818402° N, and Longitude 77.001022° W. Slagle Run Creek, which flows into Conewago Creek, is located adjacent to the Site to the east. The property is bordered by commercial properties to the north, east, and south. Residential properties are located beyond to the south, and agricultural land beyond to the east.

2.2 SITE DESCRIPTION

The Miller Chemical (Miller) facility is approximately 13.23 acres. The facility includes a 96,000-square foot main building located in the approximate center of the property. This building was used for several different operations, including fertilizer and pesticide production, a laboratory, storage, packing, and as an office. Three smaller buildings were also located on the Site: a 6,300-square foot office building, 2,640-square foot maintenance building, and 1,056-square foot document storage building. Additionally, a stormwater retention pond is located on the property, northeast of the main building. The areas surrounding the former buildings are landscaped with grass and other vegetation (ENVIRON, 2015).

2.3 SITE HISTORY

The Miller property was originally used as agricultural land and was developed in the late 1930s and early 1940s. The property was bought by Union Fertilizer and utilized for the manufacturing of fertilizers. In the mid-1940s, Miller acquired the facility and continued to manufacture fertilizer in the original building formerly located at the facility. In the 1960s, operations expanded to include pesticide formulation and blending. Operations were conducted in the original building located in the northwest corner of the Site until the 1980s when the building was demolished by the means of a controlled fire. The current main building used for the blending of pesticides was constructed in the 1960s (ENVIRON, 2015).

In the 1960s, the facility was creating organochlorine pesticides, using primarily xylenes and emulsifiers. Operations shifted to blending organophosphate pesticides and carbamates, because xylenes and emulsifiers became more regulated. In the 1990s, pesticide production was phased out and operations shifted completely to fertilizer blending. Although pesticide production ceased, the facility did handle and repackage pesticides. In a period between 1984 through 2012, the main building went through many additions, and the office building located on the Site was constructed between 1968 and 1971 (ENVIRON, 2015).

On June 8, 2015, at approximately 3:40 a.m., the main building at the facility caught fire and emergency responders were alerted. To combat the fire, firefighters used a large volume of water. Efforts were made to contain the runoff water from firefighting activities in a retention

pond located on the Site. Despite these efforts, runoff water traveled across agricultural fields and into Slagle Run Creek, which flows westward and connects to Conewago Creek.

3.0 SITE ACTIVITIES

On June 16, 2015, WESTON collected four residential well samples and one groundwater spring sample from four residential locations along the Conewago Creek in accordance with the Final Field Sampling Plan, Miller Chemical Fire Response (WESTON, 2015). This section discusses the sampling activities conducted during this assessment. The locations where samples were collected are depicted on Figure 2, Residential Sampling Locations.

3.1 RESIDENTIAL WELL SAMPLING

On June 16, 2015, WESTON collected four residential well samples from four residential properties located along or near Conewago Creek. The residential well locations were selected by the EPA OSC based on their proximity to the Site and to Conewago Creek. Each sample collected was analyzed for anions (nitrate, nitrite, sulfate), total organic carbon (TOC), volatile organic compounds (VOCs), total cyanide, and Target Analyte List (TAL) metals.

All residential well samples were collected in accordance with WESTON Standard Operating Procedure (SOP) No. 202, Residential Groundwater Sampling (WESTON, 2011a). At each sampling location, WESTON purged the well for at least 15 minutes prior to collecting the sample. Samples from all residential wells were collected from as close to the well head as reasonably possible prior to any filtration or water treatment. Water quality measurements (temperature, pH, oxidation/reduction potential [ORP], dissolved oxygen [DO], conductivity, and turbidity) were collected at each location with a YSI multi-parameter quality meter prior to sampling. Table 1 summarizes the residential well information, any treatment system observed during sampling, and the water quality measurements collected at each location. Samples were collected directly from the sample location into the appropriate sample containers for each analytical suite.

3.2 GROUNDWATER SPRING SAMPLING

On June 16, 2015, at location RW-001, a sample was collected from a natural groundwater spring. The natural groundwater spring sample was collected in accordance with WESTON SOP No. 203, Surface Water Sampling (WESTON, 2011b). Water was collected directly from the spring into the appropriate sample containers for each analytical suite. Water quality measurements (temperature, pH, ORP, DO, conductivity, and turbidity) were collected from the spring with a YSI multi-parameter quality meter, prior to sampling. The spring sample was analyzed for anions (nitrate, nitrite, sulfate), TOC, VOCs, total cyanide, and TAL metals. Table 1 summarizes the spring water quality measurements collected.

3.3 SAMPLE MANAGEMENT

All samples collected were handled and packaged in accordance with the WESTON Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (WESTON, 2010) and in accordance with the *Contract Laboratory Program Guidance for Field Samplers* (EPA, 2014). All shipping containers were properly labeled with EPA chain-of-custody seals and delivered with signed chain-of-custody forms and appropriate hazard warnings for laboratory personnel. Copies of the chain-of-custody records are provided with the Validated Analytical Results Packages in Appendix A. As appropriate, samples were preserved, and all samples were kept on ice during delivery to the assigned laboratories.

4.0 ANALYTICAL RESULTS

This section summarizes the analytical results for the samples collected at the Site by WESTON during this evaluation. All samples were assigned and analyzed by the WESTON-procured Tier IV laboratory for the following analyses: anions (nitrate, nitrite, sulfate), TOC, VOCs, total cyanide, and TAL metals. Analytical results are summarized in Table 2. Validated Analytical Results Packages are provided in Appendix A.

4.1 RESIDENTIAL WELL RESULTS

VOCs were not detected in any of the residential well samples collected, with the exception of tetrachloroethene at a concentration of 1.1 micrograms per liter ($\mu\text{g/L}$), in the sample collected

from residential well RW-002, as shown in Table 2. This result is below the EPA Maximum Contaminant Level (MCL) of 5 µg/L for tetrachloroethene.

Nitrate concentrations ranged from 2 milligrams per liter (mg/L) in the residential well sample collected from location RW-001 to 8.4 mg/L in the residential well sample collected from RW-004. Sulfate concentrations ranged from 3.8 mg/L in the residential well sample collected from location RW-002 to 26 mg/L in the residential well sample collected from location RW-001. Nitrite was not detected in any of the residential well samples collected. Concentrations of nitrate, sulfate, or nitrite were not detected at concentrations exceeding their respective MCLs, as shown in Table 2.

Total cyanide was only detected at concentrations of 0.0050 mg/L and 0.0044 mg/L in the residential well samples collected from locations RW-001 and RW-002, respectively. Both of these results are below the MCL of 0.2 mg/L for total cyanide, as shown in Table 2. Additionally, the cyanide sample results were qualified during data validation as being assumed to be a blank contaminant.

TOC concentrations ranged from 1.4 mg/L in the residential well sample collected from location RW-002 to 34 mg/L in the residential well sample collected from location RW-004.

Metals were not detected at concentrations exceeding their respective MCLs in any of the residential wells sampled.

4.2 GROUNDWATER SPRING RESULTS

VOCs were not detected in the groundwater spring sample collected from location RW-001.

Nitrate and sulfate were detected at concentrations of 3.4 and 5 mg/L, respectively, in the groundwater spring sample collected from location RW-001; both concentrations are below their respective MCLs. Nitrite was not detected in the groundwater spring sample collected from location RW-001.

Total cyanide was not detected in the groundwater spring sample collected from location RW-001.

TOC was detected at a concentration of 19 mg/L in the groundwater spring sample collected from location RW-001.

Metals were not detected at concentrations exceeding their respective MCLs in the groundwater spring sample collected from location RW-001.

5.0 REFERENCES

- ENVIRON (Ramboll Environ Inc.). 2015. *Sampling and Analysis Plan for Miller Chemical Facility*. June.
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